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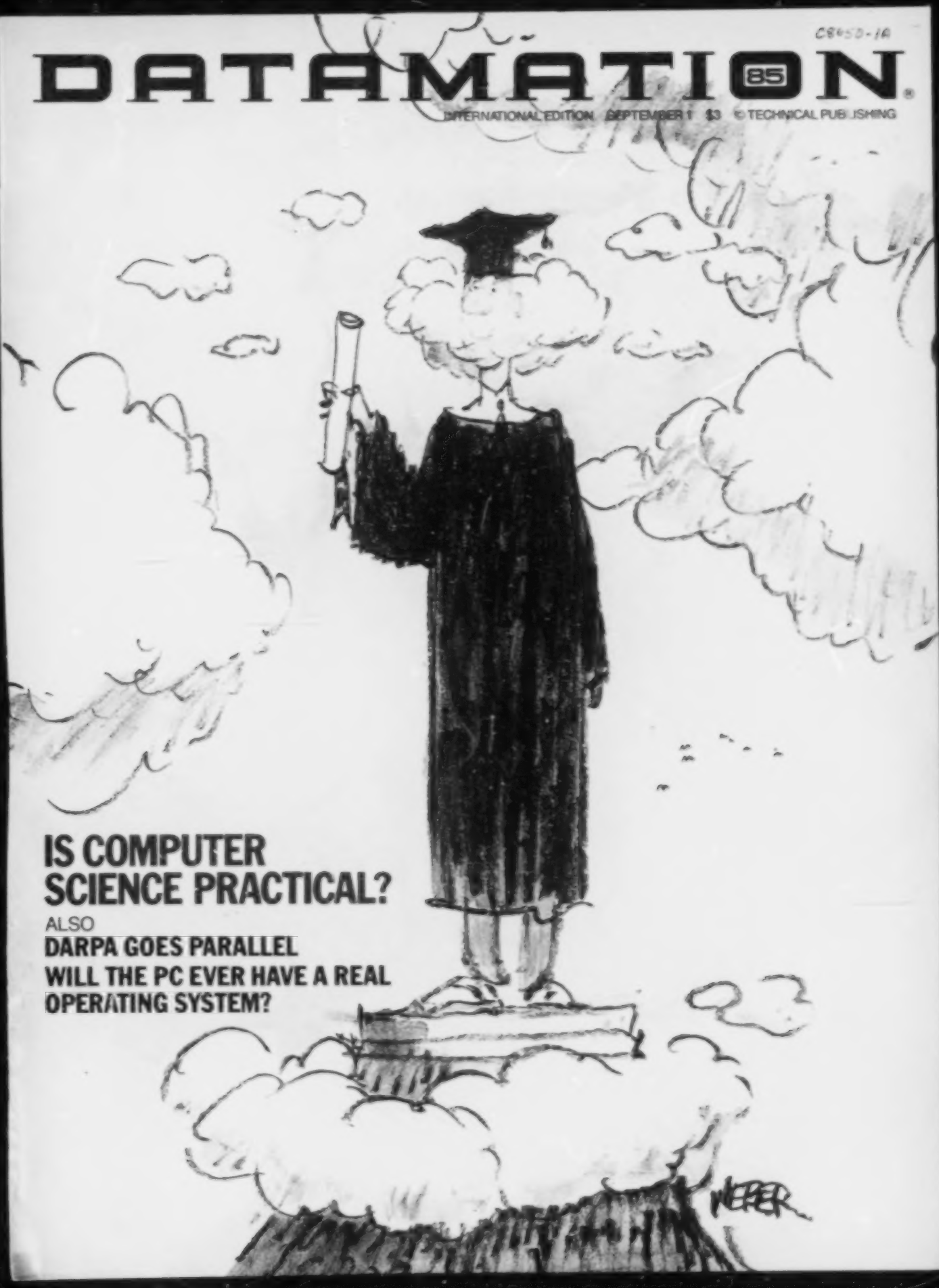

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INTERNATIONAL

DATAMATION spots the best and the brightest in the Land of the Rising Sun.

JAPAN'S TOP 10

by Thomas Murtha and Linda Runyan

The leading lights in the Japanese data processing world burned even brighter last year, thanks to dazzling sales on both the home and foreign fronts. In the domestic dp domain, Japan's top 10 stars pulled in combined revenues of $12.5 billion, up 20%. Exports, which eclipsed 1983 levels, chipped in another $3.1 billion to that total.

Statistics from Japan's Ministry of Finance show that the country's computer exports soared a spectacular 60%, while imports grew by roughly 36% in 1984. While these glowing global gains brightened the profit picture of local vendors, they cast a pall over Japan's relations with other nations that faced dimmer dp trade prospects.

Last year exports for the top 10 companies in Japan rose a remarkable 43%. Approximately 20% ($3.18 billion) of their total dp revenues stemmed from export sales, compared to 18% in 1983. The yen's relative weakness against the dollar helped the Japanese boost their export business, which was particularly strong in peripherals and components.

Although the official OECD exchange rates used by DATAMATION indicate a stable yen-to-dollar conversion for 1983 and 1984, the use of an annual average obscures some important trends. In fact, the yen actually weakened against the dollar during the second half of the year, which spurred export sales during that period.

The domestic dp industry also benefitted from the favorable economic conditions in Japan. Real GNP growth was up 5.8% in 1984, while the wholesale price index for capital goods remained almost constant. The resulting upsurge in capital spending stimulated the demand for dp wares. In order to meet that demand, the Japanese stepped up local computer production by nearly 50% in 1984, according to estimates from Merrill Lynch in Tokyo.

Spending increased dramatically last year in the microcomputer sector, bringing fat returns to both NEC and Fujitsu. The brightest light in the local dp market, Fujitsu pulled in revenues of around $2.9 billion. Outshining rivals NEC and IBM, the pcm prodigy scored a 27% surge in sales in 1984. Ranking right under Fujitsu is NEC, which cashed in on the demand for microcomputers and small business machines. Sales of these wares helped NEC hike its revenues 23% to $2.4 billion last year.

DATAMATION's survey shows a heavy concentration of companies at the top of Japan's dp industry. Revenues of the top 10 firms accounted for a hefty 83% of the total Japanese dp market, which was worth an estimated $15 billion in 1984. The combined sales of the first four companies in the rankings, all major mainframe makers, represent 74% of the total revenues of the Japan top 10.

The local subsidiaries of the BUNCH companies had a tough time in Tokyo last year. Jockeying for position at the bottom of the top 10 table are the NCR and Burroughs affiliates. NCR, which chalked up a 13% revenue increase, actually did much better than Burroughs, which posted a scant 0.5% gain to $271 million.

The BUNCH company that was bruised the most in the Japanese market last year was Honeywell. Taken over by NEC in February of 1985, Honeywell Information Systems Japan had sales of only $38.7 million in 1984. Early last year NEC had granted Honeywell distribution and manufacturing rights for its Acos 1000

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IBM took a beating in the Japanese mainframe replacement market last year.

FIG. 1
FASTEST GROWERS IN JAPAN

JAPAN 10 RANK	COMPANY	% CHANGE ($ MIL./Y BIL.)	JAPAN DP REV. ($ MIL.)
	Nomura Computer Systems	46.2	120.0
	Nihon Data General	29.7	44.2
	Intec	28.1	85.2
1	Fujitsu	26.7	2,860.3
	Computer Services	26.0	155.6
	Matsushita Electrical	24.2	136.8
2	NEC	23.2	2,407.5
4	Hitachi	21.8	1,759.6
	Nihon Digital Equipment	21.7	130.1
7	Oki Electric	18.3	620.8

FIG. 2
LEADING JAPANESE DP COMPANIES

		WORLDWIDE DP REV. ($ MIL)	% CHANGE ($ MIL./Y BIL.)
1	Fujitsu	3,499.7	24.9
2	NEC	2,799.4	21.7
3	Hitachi	2,199.5	29.3
4	Toshiba	1,136.6	31.6
5	Oki Electric	899.8	19.8
6	Mitsubishi Electric	817.0	16.7
7	Nippon Univac Kaisha	496.3	13.4
8	Ricoh	247.5	16.5
9	Matsushita Electrical	210.5	23.4
10	Computer Services	155.6	25.6

mainframe series. The deal also included cross-licensing of patents and copyrights.

Nippon Univac Kaisha, which is 34% owned by Sperry, racked up a respectable 13% increase in Japanese dp revenues. Slower growth at Mitsubishi Electric helped Oki to narrow the revenue gap between the two companies that hold the sixth and seventh position in the top 10. A sharp drop-off of $874.2 million separates two other local dp powers, Hitachi and Toshiba. Ranking fifth in the top 10 table, Toshiba pulled in $885.4 million in domestic dp revenue last year. Strong overseas sales of its micro peripherals products helped Toshiba boost its dp exports by more than 52% last year.

When Toshiba exited the mainframe market a decade ago, Hitachi strengthened its commitment to the pcm path. Hitachi's lead shows the advantages of selling mainframes in a market mad for MIPS. The demand for MIPS in Japan is increasing at a rate of about 50% per year, according to the country's Ministry of International Trade & Industry (MITI), which estimates that the installed mainframe base in Japan is worth around $25.5 billion.

IBM, which has roughly 26% of that installed mainframe base, is having a tough time keeping the wolves at bay. Hot on IBM's heels is Fujitsu, which has nearly 25% of the installed base, and Hitachi, which holds a 20.5% share. Coming further down the line is NEC, which has captured 13% of the installed mainframe base in Japan.

BEATING IN LOCAL MARKET

IBM Japan really took a beating last year in the local mainframe replacement market. For every replacement order it won, Fujitsu and Hitachi captured almost four. Even NEC managed to squeeze Big Blue out of a few low-end sites. Local users cited superior price-performance and Japanese language processing capability as the main reasons

The big guns in the Japanese dp domain took aim at IBM by rallying around the OSI standard.

DATAMATION'S JAPAN 10

1984 RANK	COMPANY	OWNER-SHIP	1984 JAPAN DP REV. ($ MIL.)	% CHANGE	TOTAL DP REV. ($ MIL.)	% CHANGE**	1984 TOTAL REV. ($ MIL.)
1	Fujitsu Ltd.	Japan	2,860.3	26.7	3,499.3	24.9	6,440.7
2	NEC Corp.	Japan	2,407.5	23.2	2,799.4	21.7	7,594.3
3	IBM Japan Ltd.	U.S.	2,229.1	17.3	44,292.0*	21.3*	45,937.0*
4	Hitachi Ltd.	Japan	1,759.6	21.8	2,199.5	29.3	21,048.2
5	Toshiba Corp.	Japan	885.4	14.5	1,136.6	31.6	13,891.8
6	Mitsubishi Electric Corp.	Japan	653.6	9.9	817.0	16.7	7,329.5
7	Oki Electric Industry Co. Ltd.	Japan	620.8	18.3	899.8	19.8	1,738.6
8	Nippon Univac Kaisha Ltd.	Japan/U.S.	488.8	13.4	496.3	13.4	496.3
9	NCR Japan Ltd.	U.S.	291.3	13.1	3,670.0*	10.1	4,074.3*
10	Burroughs Co. Ltd.	U.S.	271.1	0.5	4,500.0*	12.5	4,875.6*

*Includes parent company figures **% change in $ millions/yen billions

for switching to Hitachi and Fujitsu machines.

Big Blue has been slow in providing Japanese users with language support facilities. This delinquency certainly accounted for some of the defections. For example, the 4300 series, which is manufactured in Japan, didn't get appropriate Japanese language support until last year. And even when this language support became available, Japanese users still complained that IBM was sluggish in providing the related applications software—software that Fujitsu was readily supplying.

Such sluggishness does little to endear IBM to customers in Japan, the second largest dp market in the world. Japan is also the only major dp market in the world where Big Blue doesn't dominate. With Japanese dp revenues of $2.2 billion, IBM comes in third in the top 10 survey, falling below NEC and Fujitsu, which has been number one in the Japanese dp realm since 1979.

The erosion of IBM's Japanese market share was even more evident last year as sales continued to slump. IBM responded with a major shakeup of its Japanese operation. Many Japanese senior managers were replaced by American IBMers. The company also moved its Asia/Pacific Group headquarters to Tokyo, making George H. Conrades the boss.

Hit hard at the high end of the market, IBM took even stronger punches at the low end. The same punches were also felt by Apple, which was unable to make a dent in the Japanese micro market, despite a lavish local advertising campaign. Last year the leader in the Japanese pc world was clearly NEC. And what NEC gained by garnering 40% of the local market for 16-bit micros came at the expense of IBM, which barely managed to hold on to its 13% stake. Together NEC and Fujitsu captured almost 60% of the $1.7 billion domestic micro market.

The IBM 5550 and 5540 workstations didn't give local competitors much of a run for their money either. In fact, some of the 48,000 units that were shipped last year are still bloating local dealer's inventories.

To counter the challenge posed by Fujitsu and NEC in the small business computer and micro sectors, IBM launched a marketing drive last year to create a network of value-added resellers. It also enlisted the help of local software/services companies in a campaign to beef up Japanese software support and distribution networks.

One of those companies IBM collaborated with last year was Computer Services Corp., which doesn't make the top 10 table. Nevertheless, Japan's largest independent software/services firm ranks fifth on DATAMATION's list of fastest growers in Japan (Fig. 1). Computer Services hauled in domestic dp revenues of $155.6 million, up a hearty 26%. Most of that revenue growth comes from system development work the company does for the big banks in Japan. Those big banks are wedded to IBM wares and that makes Computer Services' ties to IBM even tighter.

TWO OF FASTEST GROWERS

Two other software/services vendors not in the top 10—Nomura Computer Systems and Intec—also make the table of fastest growers. Owned by Japan's biggest securities firm, Nomura Computer Systems derives most of its money from sales of software to the financial services and retail industries. Last year those local dp revenues amounted to $120 million, up an impressive 46%.

Software/services company Intec also did well in '84, spurting up 28% to score domestic dp revenues of over $85 million. While most (45%) of the firm's revenues are from the services sector, there are signs that more of its sales will be coming from the value-added network (van) side. Intec, which was the first company in Japan to offer intracompany van services, has relied heavily on outsider GTE for communications hardware and software. Having no links to the local hardware powers, Intec could take advantage of its head start and GTE connection to become Japan's largest independent van supplier.

Another company that racked up good growth gains, but not good enough to qualify it for the top 10, was Matsushita Electrical. The company, which inked an oem deal in 1984 to supply IBM with low-cost microcomputer and workstation components, pulled in $137 million in domestic dp revenues, up over 24%.

Both Matsushita Electrical and Computer Services make it into the league of leading Japanese companies that are ranked by worldwide dp revenues (Fig. 2). Also on that table is Ricoh, with total dp sales up 16.5% to $247.5 million. Still not a major player in the Japanese dp arena, Ricoh wants to branch out into more sophisticated office automation areas. Taking a step in that direction last year, Ricoh began working with AT&T International on joint marketing ventures in microcomputers and image processing equipment.

The Ricoh-AT&T alliance was one of several cooperative couplings that were being negotiated last year between Japanese and American firms. Many of these team-ups came on the telecom side. AT&T and

JAPAN DP REV. AS % OF TOTAL DP REV.	DP REV. AS % OF TOTAL REV.	NET INCOME ($ MIL.)	1984 JAPAN EMPL.	1984 TOTAL EMPL.	FISCAL YEAR END
81.7	54.3	310.0	61,750	65,000	Mar.
86.0	36.6	187.6	N.A.	78,389	Mar.
5.1	96.4	6,582.0*	15,110	394,930	Dec.
80.0	10.4	824.8	168,796	173,643	Mar.
77.9	8.1	362.1	112,000	114,000	Mar.
80.0	11.1	189.5	48,200	66,000	Mar.
69.0	51.7	44.7	17,266	17,800	Mar.
98.5	100.0	9.7	4,200	4,200	Mar.
7.9	90.0	342.6*	4,429	62,000	Nov.
6.0	92.3	244.9*	2,463	65,000	Nov.

trading giant Mitsui Corp. joined forces to battle IBM and Mitsubishi on the van front. Another Japanese trading firm, Marubeni Corp., hooked up with Tymnet to offer a van service that will be available this fall. To compete with the van force of IBM and Mitsubishi, Fujitsu and Hitachi helped rewrite portions of AT&T's Net 1000 software, adapting it for use in Japan.

All this jockeying for postion on the local telecom turf came in anticipation of last April's liberalization of Nippon Telegraph & Telephone (NTT) Public Corp. The legal reforms that came in 1984 set the stage for competition in van and common carrier services and in customer premises communications equipment.

NTT's fiber-optic trunk line that will connect all major Japanese cities also heated up competition in the software and services sector. The national Information Network System (INS), which is slated to become operational in the early 1990s, sparked greater interest in the fledgling videotex field.

The Character and Pattern Telephone Access Information Network (CAPTAIN) videotex service, jointly developed by NTT and Japan's Ministry of Post & Telecommunications (MPT), got off to an inauspicious start in late 1984, when demand was hampered by high hardware costs. Meanwhile the major Japanese dp vendors, still not wedded to CAPTAIN, are eyeing the North American Presentation Level Protocol Syntax (NAPLPS) that was developed by AT&T as an enhanced version of the original Canadian Telidon standard.

The big guns in the Japanese dp market also rallied around the International Standards Organization's open systems interconnection (OSI) standard last year. The move was aimed at wounding IBM with its SNA approach. The Japan Industrial Standards (JIS) Committee, working under the auspices of mighty MITI, formulated an OSI-based reference model for network architecture in Japan. Not to be outdone, Big Blue worked with NTT to develop OSI gateways between the PTT's Data Communications Network Architecture (DCNA) and its own SNA system.

MITI LAUNCHES CAMPAIGN

MPT, the chief architect of Japan's telecom deregulation strategy, also played a role in the standards arena last year. Working together with Digital Research Japan and Microsoft's Far East rep, ASCII Corp., MPT came up with standard protocols for micro communications software. Not content to let rival bureaucrats at MPT take over its turf, MITI launched its own campaign to promote JIS's OSI proposals.

Japanese vendors were also getting into the micro mode last year, pushing Microsoft's MSX operating system standard for 8-bit home computers. The push petered out, as prices fell and demand sagged. A dozen companies, however, managed to ship over 400,000 MSX machines to the domestic and European markets before the boom went bust.

During 1984 the top six domestic dp companies—Fujitsu, NEC, Hitachi, Toshiba, Oki, and Mitsubishi—tried to hash out a standard for a Japanese version of AT&T's Unix operating system. AT&T, NTT, and MITI were all involved in the Unix discussions. Although no formal recommendations were issued, MITI did announce plans to use Unix-based workstations and programming productivity tools in its ambitious Sigma network. Throughout the year the select six were also busy at work

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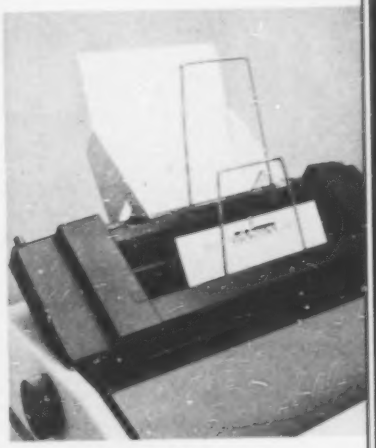

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CIRCLE 84 ON READER CARD

The dp downturn in the States could cloud the profit picture for Japan's brightest performers.

METHODOLOGY

The 1984 Japan top 10 survey was compiled exclusively by DATAMATION from information culled from an in-house database that tracks the dp results of over 200 companies worldwide.

All revenue and earnings figures have been adjusted to calendar year calculations and converted to U.S. dollars, using OECD exchange rates for the appropriate period.

The survey definition of data processing includes the following product and service categories: mainframes, minicomputers, microcomputers, office systems, data communications, peripherals and terminals, software and services, and maintenance and repair.

Explicitly excluded are data transmission or "basic" services from specialized common carriers; standalone electronic and mag card typewriters; standalone electronic cash registers; instrumentation devices; automatic test equipment; semiconductors; printed circuit boards; and data processing supplies, except for magnetic media for disks and tape drives.

For computer-based manufacturing systems, such as computer-controlled machine tools, only the computer and hardcopy output devices are included and not the tools themselves.

on Unix-based workstations.

The move to Unix could benefit Japan's minicomputer makers, who had another good year in 1984. The Japanese subsidiaries of U.S. mini manufacturers Digital Equipment and Data General also did well, scoring impressive revenue increases that qualified both of them for the fastest growers table.

Strong sales of the VAX series helped Nihon Digital Equipment chalk up a 22% increase in Japanese dp revenue, which hit the $130 million mark. Meanwhile, Nihon Data General's 30% boost pushed its Japanese dp revenues up to $44.2 million.

Last year DG set up a local factory to produce the Data General One laptop micro, which was also designed in Japan. Indeed, more and more U.S. companies are coming to Japan to take advantage of the low-cost production. Japanese dp vendors have been using those low-cost production techniques for some time. They've also been relying on the business blessings of Mother MITI.

Japan's mightiest mainframers have banded together through industrial organizations and through MITI, which gives them prominent positions on its powerful industrial structure council. MITI has helped promote more basic research in Japan by coordinating R&D cooperation among the local industry leaders.

VAUNTED R&D SCHEME

The most vaunted R&D scheme to date has been MITI's Fifth Generation Computer Development Project. The results from the first phase of the project were discussed in front of an international audience in Tokyo last November. Observers at the meeting felt that the Japanese had made some definite inroads into the field of artificial intelligence, but still had a long way to go in bringing AI down to earth.

Last year NEC, Fujitsu, Mitsubishi, and Toshiba were all reportedly working on more down-to-earth applications that were spin-offs of Japan's AI research programs. But the company that may get the farthest the fastest is Hitachi. An active participant in MITI's AI research project, Hitachi has in addition a hefty $1 billion R&D budget that enables it to independently pursue its own artificial intelligence efforts.

Independence was also the name of the game last year for Japanese dp suppliers, who preferred to cement existing tie-ups to experimenting with new partners. With the exception of the courtship rituals that preceded the NTT liberalization, no major marriages were announced in 1984. Fujitsu and Hitachi continued to keep low profiles abroad, discreetly selling their wares through their European and American partners. And when the plug-compatible shakeout hit the U.S. market, the Japanese pcmers hardly saw a blip on their sales charts.

Those blips may be coming if the backlash over the touchy trade issue severely stems the flow of Japanese dp exports to the U.S. The dp downturn in the States could also cloud the profit picture for Japan's brightest performers. If that happened those leading lights would refocus on the home front. That could further dim the dp power of IBM in the Land of the Rising Sun. ■

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